REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 1-20 are pending in the present application. Claims 4, 5, 11, 12, 17 and 18 are canceled and claims 1-3, 8-10, 13-16, 19 and 20 are amended by the present amendment.

I. Objection to the Drawings

Item 1 of the outstanding Office Action objected to the drawings. Figures 2a, 2c, 4 and 5 are amended in light of the comments noted in the outstanding Office Action and to correct minor informalities. It is believed no new matter is added. Accordingly, it is respectfully requested this objection be withdrawn. Replacement drawing sheets are enclosed for approval.

II. Rejection Under 35 U.S.C. § 103

Claims 1-20 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,231,677 to Mita et al. (hereinafter "Mita") and U.S. Patent No. 5,392,137 to Okubo (hereinafter "Okubo"). This rejection is respectfully traversed.

In a non-limiting example, the present application teaches an apparatus which generates a clear image from an input image generated by reading in print contents. The generated image includes printing dots and moire patterns. A contour adder adds contours to a contour image by scanning the contour image and determining whether the density of contour pixels in a particular region is equal to or greater than a density threshold value. The apparatus also calculates an average value of contour levels of contour pixels in the particular region, and changes the contour level of pixels in the particular region to the average value if the density of contour pixels in the region is equal to or greater than the threshold value in the contour level of the pixel in the particular region is smaller than the average value.

As an advantage, an image can be produced from printed matter (in which the printed matter includes dotted print contents), in which the generated image includes regions having many printing dots and moire patterns, and in which the regions are smoothed with continuous gradation. Further, the original image (the input image) is maintained including information of contour portions which do not include printing dots and moire patterns. As a result, an image having a more natural appearance is obtained (see the specification at page 12, lines 19-26).

Amended independent claim 1 includes similar features to claim 5 (which is accordingly cancelled), and recites "a determination unit which scans said contour image with a predetermined window, and determines whether a density of contour pixels in said predetermined window is equal to or greater than a threshold value concerning the density." Amended independent claim 1 further recites "a calculator which calculates an average value of contour levels of contour pixels in said predetermined window," and "a change unit which changes a contour level of a target pixel in said predetermined window to said average value if the density of the contour pixels in said predetermined window is equal to or greater than said threshold value concerning the density and the contour level of the target pixel in said predetermined window is smaller than said average value," support for which is found in the originally filed specification at least at page 8, line 25 to page 9, line 27. Independent claims 8 and 14 are similarly amended.

Page 3 of the outstanding Office Action cites Mita at column 9, lines 57-64 in relation to "calculating an average value of contour levels of contour pixels in the predetermined window." However, the cited portion of Mita only discusses "the operation of the smoothing processor 3." The outstanding Office Action at page 2 cites Mita at column 4, lines 29-32 in relation to the contour adder of the amended independent claims, which section of Mita discusses an "edge emphasizer." Because in Mita the smoothing processor is different from the edge emphasizer, and because the smoothing processor of Mita does not calculate "an average value of contour levels of contour pixels in said predetermined window," as in the amended independent claims, it is respectfully submitted amended independent claims 1, 8 and 14 and each of the claims depending therefrom patentably distinguish over Mita.

Moreover, although the outstanding Office Action at page 3, cites Mita at column 9, lines 24-68 in relation to "determining whether a density of contour pixels in the predetermined window is equal to or greater than a second threshold value," the cited portion of Mita only discusses an "edge detector 1" which operates due to a "linear differentiation." Mita discusses only that "the differentiated value detector 1 serves as a kind of band-pass filter." However, the cited portion of Mita does not discuss or suggest changing "a contour level of a target pixel in said predetermined window to said average value," as in the amended independent claims. Further, the cited portions of Mita do not discuss or suggest an average value, nor changing a contour level of a target pixel to an average value, because the edge emphasizer of Mita does not use an average value.

Accordingly, it is respectfully submitted amended independent claims 1, 8 and 14 further patentably distinguish over Mita. Also, Okubo only discusses a two-stage filtering process in which an image is first processed through an edge sharpening filter and then processed through a smoothing filter, in which a mixing factor is used to obtain an output image. However, it is respectfully submitted Okubo also does not discuss or suggest the features of the amended independent claims.

Accordingly, it is respectfully submitted independent claims 1, 8 and 14 and each of the claims depending therefrom patentably distinguish over Mita and Okubo.

III. Amendments to the Claims and Specification

In addition, claims 1-3, 8-10, 13-16, 19 and 20 and the specification are amended only to correct minor informalities and to better conform to standard patent practice. It is believed no new matter is added.

IV. Conclusion

Consequently, in light of the above discussion and in view of the present amendment, this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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